Available online at www.sciencedirect.com

SciVerse ScienceDirect

Procedia - Social and Behavioral Sciences 28 (2011) 855 – 861

Procedia
Social and Behavioral Sciences

WCETR 2011

Educational standard content design system for virtual university

Mohammad Akhshabi [a] *, Javad Khalatbari [b], Alireza Derakhshan [c] ,Mostafa Akhshabi [d]

[a] *Department of Industrial Engineering, Islamic Azad University Tonekabon Branch , P.O. Box 46819-66856, Tonekabon, Iran, m.akhshabi@tonekaboniau.ac.ir*

[b] *Assistant professor, Islamic Azad University Tonekabon Branch , Tonekabon, Iran*

[c] *Assistant professor, Islamic Azad University, Science and Research Branch, Department of computer Engineering, Neyshabur , Iran*

[d] *Islamic Azad University, Science and Research Branch, Department of computer Engineering, Neyshabur ,khorasan razavi, Iran, mostafa.akhshabi@gmail.com*

Abstract

During recent years trying to prove electronic teaching methods, in front of traditional methods have more success. success factors in e-learning are Including platform communications, level of accessibility to the computer user, level of familiarity of user with computer ,educational software and electronic content is the most important element. Therefore choose how education, easy, accessible, flexible and cheaper and ultimately measurable goals and assessment according to management that could be useful for optimization of human resources, will be inevitable.Electronic content must be considered to transfer knowledge to learner in addition simulated personality and behavior professor and education related. Electronic content virtual courses are a system that would treat to a teacher runs education behavior as possible. In electronic content production should attend to quality courses, increasing production volume, observance of standards and management of electronic content production.

Keywords: content design, Scorm, virtual universit

1. Introduction

Teaching in an E-Learning environment can contribute to the ability to teach, the ability to learn and most importantly to act as a bridge between two main components in the classroom, the teacher and the learner. E-learning provides different environments for learners, with dynamic, interactive nonlinear access to a wide range of information as well as to self directed learning in online communication (e-mail and forums). Due to the wide range of learning environments e-learning has the potential to be a powerful learning tool for fostering students' will and skill for learning complex topics.

E-Learning environments may contribute to the process of teaching and learning but only if the integration is done within the framework of proper pedagogy, both educational and technological. Many researchers have noted the value of the E-Learning environment, which, in the context of science teaching, combines a variety of visual means to help illustrate scientific phenomena and increase understanding of abstract and complex issues.

doi:10.1016/j.sbspro.2011.11.157

Building customized E-learning learning programs requires the use of authoring systems such as Dreamweaver and Flash, which places high demands on design, programming skills, and time. An alternative to using such applications is the deployment of course or learning management systems.
These systems are trying to use information that is stored in the user model to adapt educational content on teaching style learners) Brusilovsky .,2007; Brusilovsky .,2003;De Bra., Ruiter .,2001;Cotton .,1988., Brusilovsky et al., 1996;Cheung et al., 2003; Martins.,2008).E-learning systems and educational systems typically include three components: educational content, user model and adapt model ([Martins et al.,2008;Sonwalkar .,2008;Brusilovsky., Henze .,2007; Brusilovsky .,2007; Brusilovsky ., Millán .,2007).Create appropriate educational content and effective education is one of the main problems in designing and producing e-courses and without doubt it is one of the main problem in the development and production of suitable electronic learning material for learners (Holohan et al., 2005).

2. What is Scorm Standardization

The main goal is to produce integrative and standard content and the facility of implementation in various educational systems, and with regard to the central core of education, it is possible to send electronic content to LMS easily and use it, and finally, to respect educational principles which have been passed internationally, and the possibility of sharing it is the most obvious feature.

There are two important things which are common in various Scorm (Sharable Content Object Reference Model) Editions

1 – All of the contents are in one package.

2 – These contents can be executed runtime and information exchange is being performed.

Scorm package defines that these contents must be delivered as an LMS physical concept. It also includes those informational parts which are required by LMS in order to call back and install content without interference.

And we have used LRN edition of Scorm standard which has been commercialized by Microsoft Corporation, and is supported by reputable manufacturers and suppliers of educational devices and contents, and its specification is to organize content for LMS. It is also XML-based.

Producing educational content includes the two following parts:

2.1. Technical component

Simulation   **flash**  **image**  **film**  **text**  **sound**

2.2. Electronic content components (Learning Object)

Educational goals – Main instruction references – Supplemental instruction references - Educational film – Case studies – research activities – specialized terms – self-examination.

3. Properties

3.1. System Format

The design of our group's content production software allows it to define various format for it, and it is possible even if the produced content has been uploaded into the system without any disruption in the produced content.In the designing of the format, the attempt was to pay attention to the psychology of colors so the educational environment will not be dull and boring for users. For example: The correspondence between the background color and the color of other components. Widening the text screen in the way that the user watches just the text screen in the content, and other components become visible using the mouse. Using various proper effects when watching player components. An outline of the default format of the system.

3.2. The scorm standard

Like every other educational software, we used the international standard of Scorm for our software.

3.3. Reporting section in every course

When the user starts educational content, all of the information related to his/her activities is recorded and sent to LMS, and dependent on the model of LMS that which cases can be recorded by it, they are recorded which includes all of the detail, and we even established the function of the number of slide and the second when the user closed the content and that whether he/she has completed the slide or not.

These reports have been applied in the quiz and flash card system; then the reports of these sections are reported using LMS system too.

3.4. Runtime function

It is one of the standards related to Scorm; that is, the information between this software and LMS is exchanged mutually and simultaneously.

3.5. Displaying the sessions in the tree structure in Scorm-based courses

It means that it is possible to add a session to or remove a session from it. In fact, sharing contents is one of the features of Scorm.

The other specification is to prioritize the course through this tree structure selectively or compulsory; that is, whenever the student has not seen the previous sessions, he/she cannot see the next sessions. Of course, as mentioned above, performing this task is by option. All of the mentioned specifications are the characteristics of LMS, and Scorm package accepts it as pack by pack standard.

3.6. TOC content

It is another standard in which the educational chart is available separately for every course and every time.

3.7. Compatibility with Internet speed

The low speed of the Internet, and that many users do not access to the high-speed Internet, is one of the main factors of lack of virtual education development in some countries such as Iran. To solve this problem, after complete research, all of the courses in this package is in correspondence with the issue of band width and is equipped with buffering system in which all of the courses are loaded during performance, and practically, the problem of displaying the courses in the Dial-up-based internet systems has been solved.

3.8. Dynamic Content

Among the concerns about the existing educational contents, were the problems for the repetitive editions of content production in these systems that the content production must first be edited using the produced program, and again, loaded in the system, one of its consequences besides added costs, was the dependency of the first producers or the delay of editing process. To solve this problem, we designed this educational content software absolutely dynamic in order to edit the content every time, even online.

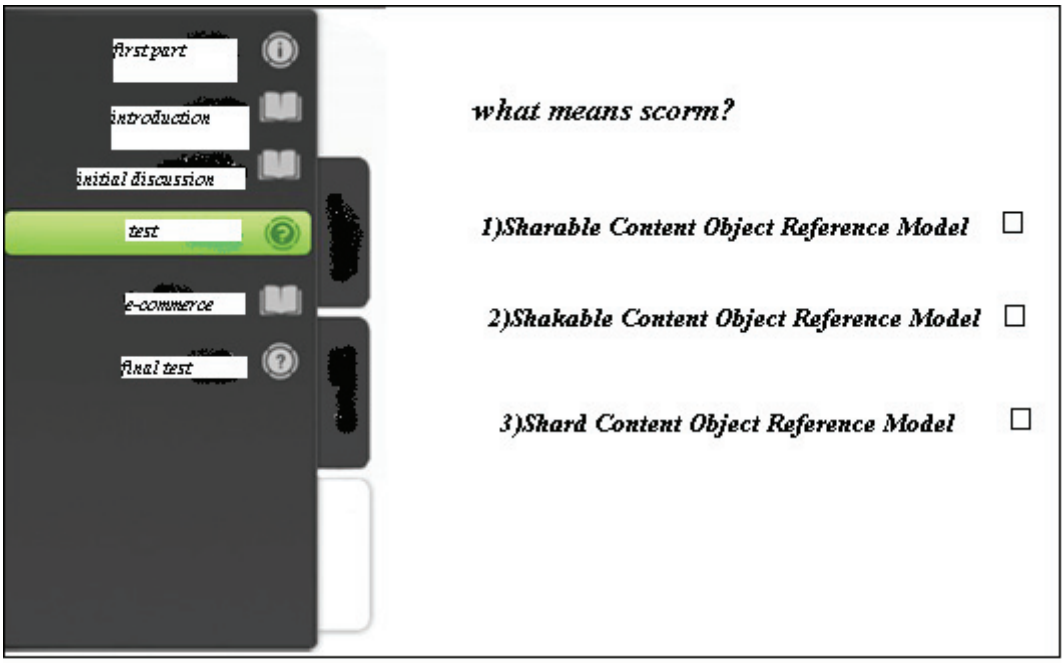
3.9. Using XML

Using XML allows controlling all of the content such as pictures, films, texts, quizzes and flash cards, and to edit them without any problems either online or offline, without the need to install the related software on the system. Because of being dynamic, the editing process in the slides is also separately; that is, for example if the instructor thinks a picture of a slide must be replaced, the problem is solved just by replacing that picture, and there is no need to make changes in other parts.

3.10. Quiz system

It means to make questions to measure the learning degree of students, and helping him/her regarding his/her answers. Our new idea in this section was to make the quiz selectively or compulsory, it is determined by instructor. The selection of answers is completely random, and just a number of answers are shown every time. There is a possibility to expose the student with various answers for each turn sowhen the test is repeated, he/she will not face repeated questions.

This test can be loaded in every position in the slide. When the test is compulsory, every student must give the test and reach the threshold, or he/she is not able to see the remaining parts of content. Also, after reaching the threshold, the score is reported for LMS, and at the end of the test, the results and correct answers are shown to the user.



3.11. TOC Features

Every slide is listed with the subject and the time for student. The student can search in the available slides and look up a particular word, the slides in which the searched word exists are listed; then the student can select the proper slide in the list. He can also watch a picture of every slide.

3.12. Playing Films

It is possible to play films runtime between slides or in the texts. This function is also equipped with the buffering system completely, and the films are loaded while playing.

3.13. Specialized terms system

It is possible to use specialized terms between or at the end of every slide to improve learning. This technique is also completely Scorm-based, and has the function of displaying pictures and texts with attractive effects.

3.14. Communication ports

In this system, the student is allowed to communicate with his/her instructor when a question is arised. If the relevant gateway to LMS is available, that message will be sent to the LMS and stored in instructor's mailbox.

3.15. Send SMS

Along with email, the questions can also be sent to instructor through SMS. It is possible when the relevant gateway for this section is available too.

The previous paragraphs were just a part of functions that specified concisely. Because this is a complete domestic system, and has been installed by the group, it is possible to add any other required function, and update it along with routine needs.

3.16. Course entertainment

Reviewing important subjects along with games and entertainment which an outline of it is demonstrated with these facilities:

A) Information preloading function.

B) Using questions for the relevant lesson when the user scrolls the mouse icon.

C) Using genius quotes when the user scrolls the mouse icon to the star icon.

D) Using lessons' important points' indication when the mouse icon is scrolled to the light icon.

E) Play games twosome or single, beside a very user friendly environment in flash system.

Content production system advantages:

Observing the up-to-date educational standard

Easy editing process with regard to the technique of content production, and avoiding multiple production

Having more interaction functions so the student can solve his/her problems through them.

Possibility of using low speed Internet

Content security with regard to the facilities mentioned in number 4. The student can only use content production when he/she is online. The contents are usable only in the system defined domain, not any other domain.

Decreasing the costs because of the very simple content editing process comparing with other systems such as Captivat and Adobe Presenter.

Because the system is completely domestic, new functions can be added along with routine needs, without any need to reedit the contents.

Because of system's integration for watching films, lesson introduction, specialized terms or quiz, there is no need to quit the content production system anymore, and all of them are available.

Acknowledgements

The author gratefully acknowledges the support provided by, Islamic Azad University Tonekabon Branch for their kind support and cooperation during researched plan that this paper resulted from it.

References

Brusilovsky P.(2007) Adaptive navigation support, In: Brusilovsky P., Kobsa A., Neidl W. (eds.): The daptive Web: Methods and Strategies of Web Personalization. Lecture Notes in Computer Science, Vol. 4321. Springer-Verlag, Berlin Heidelberg New York.

Brusilovsky P.(2007) Adaptive navigation support, In: Brusilovsky P., Kobsa A., Neidl W. (eds.): The Adaptive Web: Methods and Strategies of Web Personalization. Lecture Notes in Computer Science, Vol. 4321. Springer-Verlag, Berlin Heidelberg New York.

Brusilovsky P. (2003) Developing Adaptive Educational Hypermedia Systems: From Design Models to Authoring Tools, In: Murray T., Blessing S., Ainsworth S. (eds.): Authoring Tools for Advanced Technology Learning Environments: Toward cost-effective adaptive, interactive, and intelligent educational software. Dordrecht, Kluwer, pp. 377-409.

Brusilovsky P., Henze N.(2007) Open corpus adaptive educational hypermedia, In: Brusilovsky P.,Kobsa A., Neidl W., (eds.): The Adaptive Web: Methods and Strategies of Web Personalization,Lecture Notes in omputer Science, Vol. 4321. Springer-Verlag, Berlin Heidelberg New York.

Brusilovsky P. and Millán E.(2007) User Models for Adaptive Hypermedia and Adaptive Educational Systems, The AdaptiveWeb, LNCS 4321, pp. 3 - 53.

Brusilovsky P., Schwarz E., Weber G.(1996) ELMART: An intelligent tutoring system on Worl Wide Web, In: Frasson C., Gauthier G., Lesgold A. (eds.) Proc. of Third International Conference on Intelligent Tutoring Systems, ITS-96. Lecture Notes in Computer Science, Vol. 1086. Springer Verlag, 1996,pp.261-269.

Cheung B., Hui L., Zhang J. and Yiu S.M.(2003) SmartTutor: An intelligent tutoring system in web-based adult education, The Journal of Systems and Software, Vol. 68, No. 1, pp. 11-25.

Cotton K.(1988) Monitoring student learning in the classroom, Northwest Regional Educational Laboratory, U.S. Department of Education, School Improvement Research Series (SIRS).

De Bra P., Ruiter J.P.(2001) AHA! Adaptive hypermedia for all, In: Fowler W., Hasebrook J. (eds.) Proc. of WebNet'2001, World Conference of the WWW and Internet. AACE, pp. 262-268.

Holohan E., McMullen D., Melia M. and Pahl C.(2005) Adaptive E-Learning Content Generation based on Semantic Web Technology, In Proc. Of the Workshop on Application of Semantic Web Technologies in E -Learning of the 12th International Conference on Artificial Intelligence Amsterdam, Netherlands, July.

Martins A. C., Faria L., Vaz de Carvalho C. and Carrapatoso E.(2008) User Modeling in Adaptive Hypermedia Educational Systems, Educational Technology & Society, Vol. 11, No.1, pp.194-207.

Schaal, S. (2010). Enriching traditional biology lectures digital concept maps and their influence on cognition and motivation. *World Journal on Educational Technology, 2*(1), 42-54.

Sonwalkar N.(2008) Adaptive individualization: the next generation of online education, pp.44-47.